

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-18(Canceled).

Claim 19(Original). A thermocatalytic pollution control system comprising:

a target pollutant; and
a thermocatalytic reactor having at least one catalytic media and at least one heat source, wherein the target pollutant is passed from within and through the one catalytic media converting the target pollutant to a selected level of destruction and removal efficiency.

Claim 20(Currently Amended). A thermocatalytic pollution control system comprising:

a target pollutant having a varying flow rate;
a thermocatalytic reactor having at least one catalytic media loosely positioned inside, and at least one heat source; and
means for rotating the catalytic media to form a fluidized bed; and
means for passing the varying flow rate target pollutant into the fluidized bed of
the at least, ~~wherein the target pollutant is passed from outside and through the one~~
catalytic media and converting the target pollutant to a selected level of destruction and removal efficiency(DRE).

Claim 21(New). The thermocatalytic pollution control system of claim 20, further comprising:

a second thermocatalytic reactor having at least one catalytic media loosely positioned inside, and at least one heat source; and

means for converting the varying flow rate target pollutant passing through the second thermocatalytic reactor to another selected level of destruction and removal efficiency(DRE).

Claim 22(New). The thermocatalytic pollution control system of claim 20, further comprising:

means for rotating the second thermocatalytic reactor.

Claim 23(New). The thermocatalytic pollution control system of claim 21, wherein the first and the second thermocatalytic reactors are in series to one another.

Claim 24(New). The thermocatalytic pollution control system of claim 21, wherein the first and the second thermocatalytic reactors are in parallel to one another.

Claim 25(New). The thermocatalytic pollution control system of claim 20, wherein the one catalytic media includes: an elemental composition of Carbon, Oxygen, Hydrogen and Titanium.

Claim 26(New). The thermocatalytic pollution control system of claim 20, wherein the one catalytic media includes:

approximately 1% to approximately 86% by weight Carbon;
approximately 1% to approximately 20% by weight Oxygen;
approximately 7% to approximately 15% by weight Hydrogen; and
approximately 1% to approximately 30% by weight Titanium.

Claim 27(New). The thermocatalytic pollution control system of claim 20, wherein the one catalytic media includes: an elemental composition of Carbon, Hydrogen, Cadmium and Sulfur.

Claim 28(New). The thermocatalytic pollution control system of claim 20, wherein the one catalytic media includes:

approximately 30% to approximately 86% by weight Carbon;
approximately 6.5% to approximately 14.3% by weight Hydrogen;
approximately 1% to approximately 50% by weight Cadmium; and
approximately 1% to approximately 15% Sulfur.

Claim 29(New). The thermocatalytic pollution control system of claim 20, wherein the one catalytic media includes:

an elemental composition of Silicon, Oxygen and Titanium.

Claim 30(New). The thermocatalytic pollution control of claim 20, wherein the one catalytic media includes:

- approximately 0% to approximately 35% by weight Silicon;
- approximately 30% to approximately 60% by weight Oxygen; and
- approximately 10% to approximately 60% by weight Titanium.

Claim 31(New). The thermocatalytic pollution control system of claim 20, wherein the one catalytic media includes: an elemental composition of Silicon, Oxygen, Cadmium and Sulfur.

Claim 32(New). The thermocatalytic pollution control system of claim 20, wherein the one catalytic media includes:

- approximately 25% to approximately 55% by weight Silicon;
- approximately 30% to approximately 60% by weight Oxygen;
- approximately 5% to approximately 35% by weight Cadmium; and
- approximately 1% to approximately 10% by weight Sulfur.

Claim 33(New). The thermocatalytic pollution control system of claim 20, wherein the heat source includes: a high flux light source.

Claim 34(New). A high flux photocatalytic pollution control system, comprising:

- a target pollutant having a varying flow rate;
- a thermocatalytic reactor having a heat source;

thermocatalytic media loosely positioned in the thermocatalytic reactor; and
a motor for rotating the thermocatalytic reactor so that the varying target pollutant passing through the loosely positioned thermocatalytic media within the thermocatalytic reactor is converted to a selected level of destruction and removal efficiency(DRE).

Claim 35(New). The high flux photocatalytic pollution control system of claim 34, wherein the heat source includes: a high flux light source.

Claim 36(New). The high flux photocatalytic pollution control system of claim 34, further comprising:

a second thermocatalytic reactor with a heat source in series to the first thermocatalytic reactor.

Claim 37(New). The high flux photocatalytic pollution control system of claim 34, further comprising:

a second thermocatalytic reactor with a heat source in parallel to the first thermocatalytic reactor.